

REMARKS

Applicant respectfully requests entry and consideration of the above amendments even though presented after a final rejection. Applicant submits that the amendments do not raise new issues or require a new search. Further, entry and consideration of the amendments may isolate issues for potential allowance or appeal. The amendments were not presented earlier in the prosecution due to a better understanding of the Examiner's position as reflected in the latest Office Action.

Summary

Claims 1-10, 12-19, 28 and 29 stand in this application. Claim 11 has been canceled. Claims 20-27 have been withdrawn. Claims 1, 7, 14 and 28 are currently amended. No new matter has been added. Favorable reconsideration and allowance of the standing claims are respectfully requested

Claim Objections

Claim 7 has been objected to for informalities. Applicant respectfully requests removal of the claim objection in light of the above amendments.

35 U.S.C. § 102

Claims 1, 2, 7, 8, 10, 14-18, 28 and 29 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 6,317,834 to Gennaro et al. (hereinafter "Gennaro"). Applicant respectfully traverses the rejection, and requests reconsideration and withdrawal of the anticipation rejection.

Although Applicant disagrees with the broad grounds of rejection set forth in the Office Action, Applicant has amended claims 1, 7, 14 and 28 in order to facilitate prosecution on the merits. Applicant submits that the amendments merely clarify, either expressly or impliedly, what was already present in the claims.

Applicant respectfully submits that to anticipate a claim under 35 U.S.C. § 102, the cited reference must teach every element of the claim. *See* MPEP § 2131, for example. Applicant submits that Gennaro fails to teach each and every element recited in claims 1, 2, 7, 8, 10, 14-18, 28 and 29 and thus they define over Gennaro. For example, with respect to claim 1, Gennaro fails to teach, among other things, the following language:

- at least a first input mechanism to receive first multi-factor authentication data associated with Z authentication factors of Z types, the Z types of authentication data are each different;
- a cryptographic engine to encrypt the first multi-factor authentication data;
- a separated user authentication, non-volatile data store to store the encrypted first multi-factor authentication data; and
- a first processing unit to determine whether second authentication data received via the at least first input mechanism matches a subset of the first multi-factor authentication data, the second authentication data associated with N authentication factors of N different types where N is less than Z, a user being authenticated if the second authentication data matches the subset of the first authentication data.

According to the Office Action, this language is disclosed by Gennaro at columns 9-10.

Applicant respectfully disagrees.

Applicant respectfully submits that claim 1 defines over Gennaro. Gennaro at the given cite, in relevant part, states:

An individual seeking authorization at block 770 is prompted to provide a personal identifier (I) at block 772. The provided personal identifier is used to

find a matching record in the database. If a matching biometric record is found, two items from the matching record will be retrieved. The first item retrieved, at block 782, is the challenge list. The second item, the encrypted biometric model and challenge answers, is retrieved at block 784. At block 776, the system initiates a challenge question/answer session with the individual seeking authorization by asking those challenge questions from enrollment whose index match the elements of the retrieved challenge list. For example, if the retrieved challenge list consists of elements (1,5,6) then the system would challenge the individual with challenge questions x 1,5 and 6. At block 776, the system then creates a decryption key (k') by concatenating the individual's responses to the challenge questions. At block 786, the generated decryption key (k') is provided as input to a standard decryption algorithm in an attempt to decrypt the retrieved encrypted biometric model (T). It is important to note that if the individual provides a single incorrect answer the resulting decryption key will not successfully decrypt the record thereby resulting in the users authorization status being declared as failedY. If, however, the individual provides all correct responses to the challenge questions the record will be successfully decrypted at block 788. The individual will then be further prompted to provide a current biometric sample (S) at block 778. The current biometric sample (S) is then compared with the decrypted biometric model (T) at block 790 for statistical equivalence and a statistical equivalence score is generated therefrom. The higher the computed score the higher the statistical equivalence. At block 792, if the score is more than some predetermined accept/reject threshold the individuals authorization status is declared as "failed". Otherwise, an acceptable score will result in the individual being verified and as such granting that individual access to the database. Prior to re-storing the record in the database, a new encryption key is generated for the purpose of re-encrypting the retrieved record. The new encryption key is created by generating a new challenge list by randomly generating a new set of m integers and forming a challenge list therefrom. It is to be appreciated that each time a record is retrieved, the record will be re-encrypted with a new encryption key prior to restoring that record in the biometric database. In addition, a new challenge list will replace the old challenge list and also stored as part of the re-encrypted record.

As indicated above, Gennaro arguably discloses an authorization system that uses three types of authentication data: a personal identifier, challenge questions and a biometric sample. To gain access to a system, an individual is arguably required to provide each of the three types of data. By way of contrast, the claimed subject matter receives "first multi-factor authentication data associated with Z authentication factors of Z types, the Z

types of authentication data are each different.” To authorize an individual, the claimed subject matter contains “a first processing unit to determine whether second authentication data received via the at least first input mechanism matches a subset of the first multi-factor authentication data, the second authentication data associated with N authentication factors of N different types where N is less than Z.” The claimed subject matter requires N, where N is less than Z, authorization data types to authorize a user, whereas Gennaro requires all authorization data types to authorize a user. The claimed subject matter is advantageous because if any of the authentication factor methods or mechanisms is lost, broken, damaged or otherwise unavailable, a user may still be authenticated using a subset of the stored multi-factor authentication data. Consequently, Gennaro fails to disclose all the elements or features of the claimed subject matter. Accordingly, Applicant respectfully requests removal of the anticipation rejection with respect to claim 1. Furthermore, Applicant respectfully requests withdrawal of the anticipation rejection with respect to claims 2-6, which depend from claim 1 and, therefore, contain additional features that further distinguish these claims from Gennaro.

Claims 7, 14 and 28 recite features similar to those recited in claim 1. Therefore, Applicant respectfully submits that claims 7, 14 and 28 are not anticipated and are patentable over Gennaro for reasons analogous to those presented with respect to claim 1. Accordingly, Applicant respectfully requests removal of the anticipation rejection with respect to claims 7, 14 and 28. Furthermore, Applicant respectfully requests withdrawal of the anticipation rejection with respect to claims 8-10, 12-19 and 29 that depend from claims 7, 14 and 28, and therefore contain additional features that further distinguish these claims from Gennaro.

35 U.S.C. § 103

Claims 4, 6, 12, 13 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gennaro and further in view of U.S. Patent 5,070,479 to Nakagawa. Claims 3, 5 and 9 were rejected under 35 U.S.C. § 103(a) as being obvious over Gennaro in view of U.S. 7,000,829 to Harris et al. Applicant respectfully traverses the rejections, and requests reconsideration and withdrawal of the obviousness rejections.

The Office Action has failed to meet its burden of establishing a *prima facie* case of obviousness. According to MPEP § 2143, three basic criteria must be met to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 706.02(j).

If an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is non-obvious. See MPEP § 2143.03, for example. Accordingly, Applicant respectfully requests withdrawal of the obviousness rejection with respect to claims 3-6, 9, 12, 13 and 19 that depend from claims 1, 7 and 14, and therefore contain additional features that further distinguish these claims from the cited references.

Conclusion

For at least the above reasons, Applicant submits that claims 1-10, 12-19, 28 and 29 recite novel features not shown by the cited references. Further, Applicant submits that the above-recited novel features provide new and unexpected results not recognized by the cited references. Accordingly, Applicant submits that the claims are not anticipated nor rendered obvious in view of the cited references.

Applicant does not otherwise concede, however, the correctness of the Office Action's rejection with respect to any of the dependent claims discussed above. Accordingly, Applicant hereby reserves the right to make additional arguments as may be necessary to further distinguish the dependent claims from the cited references, taken alone or in combination, based on additional features contained in the dependent claims that were not discussed above. A detailed discussion of these differences is believed to be unnecessary at this time in view of the basic differences in the independent claims pointed out above.

It is believed that claims 1-10, 12-19, 28 and 29 are in allowable form. Accordingly, a timely Notice of Allowance to this effect is earnestly solicited.

The Examiner is invited to contact the undersigned at 724-933-9338 to discuss any matter concerning this application.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 to deposit account 50-4238.

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Respectfully submitted,

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